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An attempt was made to determine the effectiveness of specially perpared audiovisual materials for changing the aspirations of the students selected to participate in the study. The 243 subjects, chosen on the basis of their high reading comprehension scores on the California Reading Test, Advanced Form, were divided into experimental and controls groups at random. Controls received the standard guidance program offered in the Lansing, Michigan, junior high schools while the experimental group viewed a series of specially prepared movies in which gifted college students discussed ways in which intellectual and creative activities held excitement for them. The film served to demonstrate how they posed questions and arrived at original answers. The discussion was amplified in later films and each of the eight models later appeared in a documentary, a biographical style-of-life film designed to introduce the students not only to high level technical and professional careers, but also to the growing edge of knowledge, to the changing nature of each career and to topics of crucial interest in our times. Specially prepared "text-books" were provided along with extensive magazine and newspaper clippings which were relevant to and correlated with class discussions. Extensive testing and evaluation of the students' self-images, goals and aspirations were performed before and after the experiment. It was found that the experimental girls increased their acceptance of women who advance themselves and enter high level careers and also increased their own expectancies more than did the control girls. The boys followed a similar trend, but to a lesser degree; the experimental group expected more mature, creative, and highly educated wives. The experiment increased the social concern and humanitarianism of the girls, though apparently not of the boys. In general the girls were more concerned with social problems than were the boys.

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DRAFT OF FINAL REPORT

of

"The Effectiveness of Special Training with Audiovisuals in Changing Aspirations in Intellectually Superior Students"

Title VII, NDEA

USOE No. 7-32-0410-140

Elizabeth Monroe Drews

College of Education
Michigan State University
East Lansing, Michigan

1964

The research reported herein was supported by the Educational Media Branch of the Office of Education, U. S. Department of Health, Education and Welfare.

Note results on the feminine dimension.

SECTION I

INTRODUCTION

and

REVIEW OF RESEARCH

Significance of this Study

The adolescent of today, particularly the gifted adolescent, is confused as to his possible role in the world and unaware of what the world may offer. With many this lack of certainty leads to a willingness to accept stereotyped roles and careers and overly simple ways of thinking.*[1] But this picture of the adolescent may be both incomplete and misleading. Our prior studies and recent depth interviews have shown that below the superficial level many young people, and particularly the gifted, are groping for an individual identity and for an understanding of the world. They want to know more about themselves and what the dimensions of humanness are. Beyond this they want to increase their awareness of the world.

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*Asterisks designate footnotes; these are brief notes needed for clarification or understanding. Numbers denote longer notes or bibliographic references. They appear at the end of this section.

These appear to be needs of the adolescent that are fairly well agreed upon** even though the research on superior adolescents is limited.[2]

Those who teach and counsel the adolescents need to help them examine their values and their intellectual interests. But there is a lack of detailed studies which might help in understanding such students, and a lack of planned guidance and of school programs which will meet the adolescent's need to understand himself[3] and the multiple worlds[4] to which he should be introduced. However, Wrenn strongly advocates that counselors seek to understand new social forces that are influencing young people and that they apply new psychological insights into the nature of the individual.[5]

**Erik Erikson, Edgar Friedenberg, Bruno Bettleheim, Robert Peck, and Robert Havighurst.

This paucity of information about adolescents and the shortage of programs to help them develop their full psychological potential is much more marked in the case of girls than in that of boys. Many students, and especially the girls, have little chance to reflect upon, verbalize, and thus to dispel their confusions. Moreover, as psychologists and educators, we know little about how to help them, although in a society with ever-increasing leisure and affluence it would seem that our time and money might profitably be spent on designing educational programs that would make a difference in the lives of both girls and boys.

Although many able students are groping for identity and for an understanding of the world there are others who are unaware of the vast range of opportunity, living as they do in quite limited, narrow life contexts. It is among this latter group that we find the students who have accepted the limits of convention and seem to be satisfied with stereotyped roles. Some of these young people do not plan to go on to college or to continue learning, although many--particularly the girls--are well prepared and studious.[6] Probably the majority of our brightest young people have not found themselves nor have they become truly committed to learning. Many, whose abilities would seem to belie such motivational deficit, show little potential for continuing psychological and intellectual growth. Learning (which they do well) is done in school and assigned by teachers and is not seen as a self-initiated, life-time task.

Such students test low on measures of creative attitudes, on intellectual and aesthetic interests, in humane concerns, and many (as is true with perhaps the majority of Americans) will probably lead less than full lives. However, the situation is not unalterable. Studies reveal that intellectually able students from culturally impoverished backgrounds may have latent interests and concerns which frequently emerge in a suitable environment or when plausible models are presented.[7] It is simply that the student cannot understand the world or himself when he has not become aware of potentialities--his own or those of the world.

There are, however, among gifted adolescents perhaps 20 or 25 per cent with developing creative and intellectual interests.[8] This group has already discovered that they are uncomfortable with prevailing materialistic and hedonistic values and with over-simple explanations. They seek to express themselves aesthetically or to develop excellence in certain inner-directed ways. However, they feel alone and unsure. They have not met anyone like themselves nor like the ideal they have vaguely conceptualized. They do not know how to work out a life pattern within the psychological framework of their emerging values. In questionnaires[9] they have described the ideal teacher as one who develops discussions in which philosophical and ethical issues are considered, and the ideal school as one which supplies not only seminars for philosophical discussions but also a fine library and the time to use it. However, they report that teachers and schools usually fall short of these ideals. They need to discover others (both adolescents and adults) who are autonomous and who work in ways that are both exacting and challenging. Thus, these young people can discover that it is not only acceptable but also desirable to be all that they can be and perhaps they will not sell out too quickly for a career role or a life pattern that asks for little intellectual or ethical commitment.

There is much reason to believe that the longer the preparation for adulthood the richer and more productive the individual's life will be. Yet, just remaining in school is not enough. Without appropriate models and in constricting school climates there can be a lack of awareness and expectation which limits student possibilities.[10] As a result many, and especially the girls, settle for too little, too soon. Instead of delaying career decisions until they can discover themselves and know more of the world about them students may accept a role that is more of a mask[11] than a reflection of their true selves. Our adolescents must become aware of what they can do and be, and yet the knowledge of who they are must not be the sole measure of what they might become. Since first-hand experiences with "significant others" cannot always be arranged, an array of vicarious experiences must also be planned. This can occur through books or films[12] and can allow an adolescent to see the multiple ways in which creative adults develop distinctive life styles, impose form on their environments, and deal with the unknown or the complex.

A new approach to career guidance for intellectually superior students is important for many reasons. The changing realms of knowledge and shifting boundaries of careers combined with the new social needs of a world in continual transition[13] make these changes necessary. The special psychological needs of able young people suggest different patterns of education. Finally, although there are some extensive efforts to develop guidance theories and rationales which embrace both career development and personality development,[14] these have not generally been translated into program change. For these and other reasons, there is a need for a new course in guidance. However, first we should examine the readiness of the schools for such a change.

High schools have recently shown a willingness to try new programs. Throughout the country there is occuring what might be termed a revolution in education. This revolution, which has both academic and social implications* (but also a human dimension) is most apparent at the secondary level. Dramatic changes have been made in mathematics[15] and in physics[16] and there has been considerable progress in the development of new programs in the fields of biology[17] and chemistry.[18] Steps are also being taken in other subject matter areas,[19] although there is little question but that the humanities are neglected--particularly in terms of the amount of government funds allocated. The heavy emphasis on mathematics and science has been felt in the schools and often precluded enrollment in courses in the arts and humanities for many able students. With such increases and changes in content there is a trend toward increasing specialization in subject matter by the teacher. As Cremin suggests, we must recognize the possibility that this new teacher-specialist, faced with ever-increasing pressure to cover ground and to develop focus, may neglect the total development of the student. As preparation for each discipline becomes more demanding the possibility arises that only the counselor will have the talent and the time to see the adolescent whole.[20] Working with students as they move toward discovery of self and toward the building of a coherent world view is already seen by Rogers as theoretically feasible[21] and may become a major concern of the emerging counselor.

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*The task of revision in all subject areas is to bring curriculum content abreast with what is known and to present underlying principles as well as new facts. Specialists in the disciplines are suggesting the inclusion of new materials, the development of new sequences of presentation, and are selecting and translating (with the classroom teacher's help) structure and theory for use in elementary and high schools.

This would mean, however, a reconsideration of the task of the counselor and perhaps a redefinition of guidance. If, as Shoben suggests, guidance is to be more social reconstruction than remedial function, there must be appropriate training and preparation for such activities.[22] The counselor who assumes this new role will need to be a generalist himself, with an education broadly based in the humanities and/or behavioral sciences.[23] He will need to be both familiar and comfortable with self-appraisal and with the ambiguities which an open view of the world entails. Without such preparation he cannot give the student the systematic encouragement he will need if he is to begin to live an examined life, in the Socratic sense.

The counselor, with appropriate background and outlook, can contribute much in a person-to-person situation[24] to student development both by example and encouragement. However, not all learning proceeds most effectively or economically in such dialogues. Group discussion (in the classroom or in other settings) must also be provided with the counselor serving as catalyst or provocateur. There must be opportunities for values to be made articulate, to be criticized and revised as the result of encounter. There must also be an atmosphere of acceptance and freedom--students should feel comfortable in discussing such fundamental questions as how man can be both free and responsible. However, the usual vocational guidance course which is often a vehicle for presenting the future (especially in terms of occupations) to our youth does not extend to such parameters. Although new theories are emerging, career courses have not, with few exceptions, kept abreast with the revolution in education,[25] the present day fluidity within occupations, the emergence of new professions and areas of knowledge, and the unprecedented demand for high level talent.

At worst, the course which deals with occupations--by whatever title it may be known--has matched job traits and student characteristics in stereotypic fashion. Guidance has had a long-standing concern for fitting the individual to the job and vice versa. This may have had meaning in a less urgent past but is, at present, sadly inappropriate in a society in which explosive change is said to be the only constant.[26] The old concept of talking about advantages and disadvantages of jobs, statically conceived, is of a different order than the concept of an individual creating his own role and structuring a unique life pattern. (Even the supposition that there would be human agreement about what are the "advantages" and what are the "disadvantages" is questionable.) Only a dynamic and broad-gauge view of the process of career development (in a program that presents visions of the future and models after which to pattern) is consistent with today's realities. This need for guidance programs to contribute fundamentally to the development of the total personality and to the richness of experience that would make possible a full and meaningful life seems to be consistent with phenomenological and mental health emphases in psychology as well as with the explicit aims of many leaders in the field of guidance and education.

The need for the continuation of exploration through adolescence has been noted by Buehler[27] in her early developmental studies and by Ausubel[28] more recently. Yet many schools ask students to make a tentative choice of career at age fourteen. To meet these exploratory needs, multiple alternatives (which include a greater array of careers and life style as well as more dimensions within each individual career) should be presented. Occupational information sometimes gives the impression that the adult worker is concerned only with economic considerations (wages), training and education (where and how much), competitive considerations of training and education, and lines of advancement. This portrayal is inadequate in light of newly developed theories and research in occupational guidance which show the importance of looking at style of life and the twenty-four-hour day and not just the functional aspects of the work day.

If guidance is to change in these suggested ways it must engage in three primary tasks. The first of those is to increase the variety of patterns (numbers of careers and dimensions within each career) to be viewed and to present styles of life, including idealized patterns, that are consonant with the abilities of intellectually able adolescents. The second embraces the first, in the sense that opportunities and models for emulation are offered, but goes beyond knowledge to the fundamental areas of values and feelings (thus students must be stimulated by presentations and interactions to ask not only how man lives but why). Finally, beyond the efforts to free the imagination, by varied and evocative approaches and curricula, there is the need to teach students to deal with ideas and concepts. Thus the third task must be the development of thinking, inquiry, and discussion abilities (skills that transcend subject matter or disciplines or careers) so that students can continue independently on the search for self and for meaning. Within such a view of guidance, the understanding of self today and of self projected into the future becomes a very serious matter, a major intellectual enterprise, not a routinized list-making or a perfunctory career study.

Not only is a simplistic picture of individuals and of careers offered in many career-social studies courses, but also in much of education an overly general view is taken of the present and future needs of students. There is far too little provision made in the typical classroom for the fact that students mature at different rates and have greatly varying abilities. Another consideration that does not seem to be generally understood is that intellectual growth in able students probably continues longer than in any other ability level group--they should delay career choices for this reason alone. Yet in the face of all of these factors, the usual heterogeneous guidance class in the ninth grade emphasizes choosing an occupation from listings that are generally most suitable for average students. Superior boys and girls in such a class seldom have adequate opportunity to discuss and explore high level careers suitable to their abilities[29] nor is there recognition in these courses that emotional and cognitive developmental level is often very different for superior adolescents than it is for average and below average young people.[30]

The usual program not only limits the alternatives in the sense that few creative and scholarly patterns are presented but it also shows, as was noted earlier, a very limited, two-dimensional view of careers.[31] Superior students are often both interested in and capable of dealing with abstract ideas and philosophical concepts and are drawn toward complex life patterns. For such students it is particularly unfortunate that guidance, in Samler's terms, usually describes only Economic Man, " . . . a one-dimensional portrayal of man who, contrary to the soundest folk wisdom, lives by bread alone . . . the skeleton, like all such structures, lacks individuality, character, and uniqueness."[32] Samler contends that the need is to balance this picture of Economic Man with a portrayal of Psychological and Sociological Man.[33] Tiedeman has observed that we need to be more aware of people's thoughts about themselves, their work, their studies, and their lives. The study to be reported holds that it is not only important to understand the thoughts of students, but also to bring them into contact with the ideas and values held by outstanding men and women.

References

[1] An earlier study conducted in Lansing showed that almost three-fourths of the superior boys chose science and engineering as careers, and almost all superior girls chose clerical or rank-and-file social service type occupations. (See Elizabeth Monroe Drews, "A Four-Year Study of 150 Gifted Adolescents," a paper given at the annual meeting of the American Association for the Advancement of Science, Indianapolis, December, 1957.)

[2] Actually there is a lack of research on all adolescents--beyond dating and delinquency. There is some survey information but there seem to be few intensive studies particularly of intellectual and affective development and the effects of special experience. Donald Super has done work on the career development of a cross sectional group of boys. (See D. E. Super and P. L. Overstreet, *The Vocational Maturity of Ninth-Grade Boys*, New York: Bureau of Publications, Teachers College, Columbia University, 1960.) John Rothney has conducted a long-term program with a group of gifted young people for a number of years in Wisconsin, and Starke Hathaway (S. R. Hathaway and E. D. Monachesi, *Adolescent Personality and Behavior*, Minneapolis: The University of Minnesota Press, 1963) has studied over a period of fifteen years personality test data and evaluations of behavior in late adolescence of thousands of boys and girls.

[3] Benjamin Shimberg and others at the Educational Testing Service developed the ideas for such a project which had as its main purpose helping the adolescent to know himself. Martin Katz directed the project. (See M. Katz, *You, Today and Tomorrow, 3rd edition*, Princeton, New Jersey: Cooperative Test Division, Educational Testing Service, 1959.)

[4] Aldous Huxley considers the process of realizing a full and true identity in our multiple worlds a difficult matter and states that ". . . human beings (it is hardly surprising) find themselves painfully confused, uncertain where they stand or who they really are. To provide themselves with a recognizable identity, a niche in the scheme of things that they can call 'home' they will give assent to the unlikeliest of dogmas, conform to the most absurd and even harmful rules of thought, feeling, and conduct, put on the most extravagant fancy dress and identify themselves with masks that bear almost no resemblance to the faces they cover. 'Bovarism' (as Jules de Gaultier calls it) is the urge to pretend that one is something that in fact one is not. It is an urge that manifests itself, sometimes weakly, sometimes with overpowering strength, in all human beings, and one of the conditions of its manifestation is precisely our uncertainty about where we stand or who

we are. To explore our multiple amphibiousness with a view to doing something constructive about it is a most laborous process. Our minds are congenitally lazy, and the original sin of the intellect is oversimplification. Dogmatism and bovaristic identification with a stereotype are closely related manifestations of the same kind of intellectual delinquency. 'Know Thyself' from time immemorial has been the advice of all the seers and philosophers. The self that they urge us to know is not, of course, the stylized persons with which, bovaristically, we try to become identified; it is the multiple amphibian, the inhabitant of all those incompatible worlds that we must somehow learn to make the best of." (Aldous Huxley, "Education on the Nonverbal Level," Daedalus, Spring, 1962, 279-280.)

[5] C. Gilbert Wrenn, The Counselor in a Changing World (Washington, D. C.: American Personnel and Guidance Association, 1962), p. v.

[6] In a recent study by the principal investigator, a studious individual was defined as one whose chief motivation is a drive to perform outstandingly in "school learning" as interpreted by parents and teachers. This student has a strong desire to get high marks and to measure up to the expectations of those in authority. In a sample of 400 superior high school seniors, almost twice as many girls as boys chose the studious type as being the most accurate self-description. (See Elizabeth Monroe Drews, "A Study on Non-Intellectual Factors in Superior High School Students." Cooperative Research Project: No. E-2.)

[7] Higher Horizons, New York City's "Higher Horizons" program exposed deprived young people to an array of aesthetic and intellectual experiences and found not only an immediate positive response but also reported increased college attendance among the experimental group. (A. Morse, "The Search for Hidden Talent" in Schools of Tomorrow--Today, New York: Doubleday and Co., Inc., 1960.) However, many individuals do not find such programs. An example of this was Chris, a creative and contemplative high school student, whom Jules Henry described in his book, Culture Against Man (New York: Random House, 1963), p. 250. Chris felt that the only thing he wanted in life was to learn, to search for truth, but he concluded "because I am compelled to go on in society and make money I will be hindered in these wishes."

[8] In the present study, and others (Drews, op. cit.), such students were referred to as creative intellectuals. They chose the creative intellectual type as being the most accurate self-description. They are the ones who want to deal with intellectual matters, to be both contemplative and independent. They are oriented toward theoretical, aesthetic, complex, and original approaches. They want to consider what man ought to be if life is worth living.

[9] (Ibid.) A questionnaire, Student Interest Survey III, used by the investigator with 400 superior high school students in the Lansing Public Schools revealed that almost 40 per cent chose the creative intellectual school and teacher as ideal, but by self-report only about 10 per cent had had such schools and teachers. By the very fact that these students are academically able, there seems to be a built-in desire for intellectual and aesthetic experiencing. In other words, the life of the mind means a great deal to young people who have good minds.

[10] Maslow's theory of hierarchy of needs has applicability here. In an earlier study (Elizabeth Monroe Drews, "The Effectiveness of Homogeneous and Heterogeneous Ability Grouping in Ninth Grade English Classes with Slow, Average, and Superior Students," Cooperative Research Project: No. 608), the investigator studied the implications of deficiency-motivation and growth-motivation as these applied to students who functioned either well or poorly in academic and social situations. The conclusion reached was that intellectually able students might be or could become growth-motivated. However, a drive for mastery in the sense that Robert White suggests (R. White, "Motivation Reconsidered: The Concept of Competence," Psychological Review, 1959, p. 66, 297-333), and the courage needed to act on such a principle as "man's reach must exceed his grasp" probably will not fully emerge without "competence models."

[11] Huxley, op. cit.

[12] A special conference entitled, "Guidance and the Utilization of New Media" was conducted by the American Personnel and Guidance Association and supported by Title VII, Media Branch, USOE, February, 1962, Madison, Wisconsin. Experts in guidance and media explored ways to develop and use a variety of materials in the counseling setting. The proceedings of this conference have been published by the Media Branch, USOE.

[13] In January, 1963, the APGA arranged with NASA and IBM for a conference of scientists, educators, and guidance specialists (held at Princeton, N. J.) to consider the matter of guiding the individual in a world continually influenced and changed by technology and innovation.

[14] Donald E. Super, Reuban Starishevsky, Norman Matlin, and Jean Pierre Jordaan, Career Development: Self-Concept Theory (New York: College Entrance Examination Board, 1963), pp. 94.

Also see David V. Tiedeman and Robert P. O'Hara, Career Development: Choice and Adjustment (New York: College Examination Board, 1963), pp. 108.

[15] The earliest activity in the curriculum reforms in mathematics and the sciences was in the area of mathematics. Extensive work was done at the University of Illinois under Max Beberman and David Page. However, the major mathematics program has been that of the School Mathematics Study Group (SMSG) supported by the National Science Foundation and centering its activities first at Yale University and now at Stanford.

[16] The Physical Science Study Committee (PSSC) was supported by the Ford Foundation, the National Science Foundation, and others. It began as an effort to integrate chemistry and physics at the high school level. However, this failed and the PSSC has since devoted its efforts to physics.

[17] The Biological Sciences Curriculum Study (BSCS) was formed by the American Institute of Biological Sciences and has made extensive changes in curriculum. Support also came from the National Science Foundation.

[18] The Chemical Education Materials Study (CHEMS) is now working toward the completion of new materials for the teaching of chemistry.

[19] Humanities. In a recent article Frances Keppel (Commissioner of Education, U. S. Department of Health, Education, and Welfare) "Encouraging Legislation in the Arts," (Higher Education, March, 1964, pp. 3, 4, 20, 21) comments that in 1962 the U. S. Office of Education established a Cultural Affairs Branch to develop programs and activities that will extend and improve education in the arts at all levels. An example of the kind of activity encouraged by this division was a seminar on music education held at Yale University, June, 1963, which brought together musicians and teachers to consider ways of narrowing the gap between

contemporary music knowledge and educational practices and improving music education in elementary and secondary schools. In the spring of 1964 the USOE activated a Division of Educational Research which included an Arts and Humanities Branch which supercedes the Cultural Affairs Branch.

English and Social Studies. The U. S. Office of Education under U. S. Commissioner of Education, Sterling McMurrin, asked for and received congressional authorization for Project English late in 1961. Somewhat later Project Social Studies was authorized. Both are now functioning under the Curriculum Development Branch of the Division of Educational Research, USOE. Several centers for each program throughout the country have been approved.

General Curriculum. In addition to the USOE's Curriculum Development Branch, the NEA has sponsored several projects concerned with curriculum change. The NEA Project on Instruction, directed by Dr. Ole Sand, now has seven publications focusing on ways of improving instruction in the schools. The NEA Project on the Academically Talented Student, which was directed by Dr. Charles Bish, has developed publications in English, social studies, modern foreign languages, music, art, science, and math. One excellent critical evaluation of curriculum change can be found in two books by John I. Goodlad: School Curriculum Reform in the United States, The Fund for the Advancement of Education, March, 1964; and Using Current Curriculum Developments, NEA, May, 1963.

[20] Lawrence A. Cremin, "The Progressive Heritage of the Guidance Movement," Harvard Graduate School of Education Association bulletin, Vol. VIII, No. 4 (Winter, 1964), pp. 1-5, 10.

[21] Carl R. Rogers, "Toward a Science of the Person," Journal of Humanistic Psychology, Fall, 1963, pp. 72-92, states that as a result of the third force--the phenomenological-existential trend--psychology will be capable of focusing on a broader reality which recognizes that we cannot eliminate our human perspective from our picture of the world. Super applies some of these new psychological dimensions to career guidance in his definition "Vocational guidance is the process of helping a person to develop and accept an integrated and adequate concept of himself and of his role in the world of work, to test this concept against reality, and to convert it into a reality, with satisfaction to himself and benefit to society." (D. E. Super, The Psychology of Careers, New York: Harper & Brothers, 1957.)

[22] Edward Joseph Shoben, Jr., "Guidance: Remedial Function or Social Reconstruction?" Harvard Educational Review, Vol. 32, No. 4 (Fall, 1962), pp. 430-433.

[23] Counselors and the students with whom they work must be aware of social forces (overpopulation, irresponsibility in science and technology and use of resources, segregation, poverty, sub-standard education, prejudice, and war) and what steps they may take to counter these threats.

[24] Even in the one-to-one relationship there is an opportunity for a student to explore his own emerging identity; yet this is often not seen as the task of the counselor. Shoben (op. cit.) sketches in counselor tasks as follows, ". . . counselor of the obstreperous, the advisor on college selection and vocational matters, and the purveyor of tests and occupational information."

[25] Arthur E. Traxler, (ed.), Keeping Abreast of the Revolution in Education (Washington, D. C., American Council on Education, 1963). As Executive Director of the Educational Records Bureau, Dr. Traxler has concerned himself with helping the schools to make use of the best current research and knowledge. Each year, ERB sponsors a conference for educational leaders, devoted to such topics.

[26] A basic assumption in this new course is that there are certain values upon which civilized people can reach consensus even though there may not be agreement as to ways to teach these.

[27] Charlotte Buehler, From Birth to Maturity (London: Kegan and Paul, 1935).

[28] David P. Ausubel, Theory and Problems of Adolescent Development (New York: Gruve and Stratton, Inc., 1954).

[29] The statement "to discuss and explore high level careers" should be interpreted as follows: "to discuss" involves a review of an area of knowledge in relation to other disciplines, and "high level" careers refers to those whose development has involved social and moral responsibilities, and "career" is taken to mean a "style of life" rather than an "eight to five" job. These ideas have been developed more extensively in another paper. (Elizabeth Monroe Drews and Douglas Knowlton, "The Career Film Comes to Life," Audiovisual Instruction, Vol. 8, No. 1, January 1963, pp. 29-32.)

[30] This point is developed by the principal investigator in another study. See Elizabeth Monroe Drews, "The Effectiveness of Homogeneous and Heterogeneous Grouping in Ninth Grade English Classes with Slow, Average and Superior Students," Cooperative Research Project No. 608.

[31] Life patterns and the value systems are not considered. Reality is also lacking since the pamphlets talk in terms of generalizations and the films do not present "real people." (Drews, op. cit.)

[32] Joseph Samler, "Occupational Exploration in Counseling: A Proposed Reorientation," Henry Borow (ed.), Man in a World at Work (Boston: Houghton Mifflin Co., 1964), p. 425.

[33] Ibid.

Rationale for Selection of a Prototype-Model

There seems to be little question but that the able student should be exposed to an array of possibilities in terms of areas of knowledge and of life styles. Certainly students should be introduced to the major areas of knowledge and a representative sample of careers in each area, and they should be aware of the infinite variety of temperament and life patterns found within each career area. However, it is the thesis of this study that although diversity and individuality are highly desirable there are certain common qualities that the most mature individuals in all endeavors possess. Although knowledge is ever new and ever changing, elements of greatness in the human specimen have a certain timelessness and constancy. Studies of role identification as well as our historical chronicles show that certain people with exemplary qualities are influential and that those models who approach greatness carry great impact. Since our aim is to encourage full development of intellectual and ethical growth in each student, it is essential that we present examples of man at his best to our young people. More explicitly our goal parallels the aims expressed by Gardner, "We wish to foster fulfillment within the framework of rational and moral strivings which have characterized man at his best."[1]

Finding models will be a problem, but not an insuperable one. In the course of history there have been certain individuals who have had great and lasting impact for good--who have, as it were, changed the very destiny of man. Sorokin, in his studies of altruistic love concludes,

> If we ask ourselves what sort of individuals have been most influential in human history, the answer is such individuals as Lao-Tze, Confucious, Moses, Gautama Buddha, Mahavira, Jesus, St. Paul, St. Francis of Assisi, Mahatma Gandhi and other founders of great religions, discoverers of eternal moral principles, and living incarnations of sublime, unselfish love. In contrast to the short-lived and mainly destructive influence of autocratic monarchs, military conquerers, revolutionary dictators, potentates of wealth, and other historical persons, these great apostles of spirituality and love have most tangibly affected the lives, minds, and bodies of untold millions, of many generations, during millennia of human history; and they are tangibly influencing us at the present time.

> They had neither army and arms nor physical force nor wealth nor any of the worldly means of influencing the historical destinies of nations. Nor, to obtain their power, did they appeal to hate, envy, greed, and other lusts of human beings. Even their physical organism was not of the strongest kind. And yet, together with a handful of their followers, they morally transformed millions of men and women, reshaped cultures and social institutions, and conditioned the course of history. They did all this by the mere power of their sublime, pure, and overabundant love, by their unselfish spirituality and supreme wisdom.[2]

Each of these individuals was "master of his times" but also belonged to all times, was a citizen of a community and a state, but also a contributor to the world order. Distinguished by his wisdom and his compassion, he was aware of the inner needs of man and of the importance of achieving a rapprochement with other aspects of life--with his fellow man and with nature. All saw that life had basic unities that must be understood and interpreted.

Such prototypic and ideal individuals occur only rarely in the normal course of events but those who do exist and others who approximate such self-actualization should be identified, made visible to our youth, and featured in our media. In the world of today there is a great need for such individuals both because society requires their contributions and our adolescents need them as models to emulate. The premise of this research is that the world needs such people more than ever. Whitehead, prior to World War II, asserted, "We must produce a great age, or see the collapse of the upward striving of our race."[3] Similarly, Gardner, president of Carnegie Corporation, reflects, ". . . . never in our history have we stood in such desperate need of men and women of intelligence, imagination and courage. The challenge is there--greater than any generation has ever faced."[4]

Although only a few such individuals are readily identifiable there may be others who could be found if a search were begun. Maslow, who has done considerable preliminary work in identifying self-actualizing adults, contends that,

> We are in the middle of . . . a change in the conception of man's capacities, potentialities and goals. A new vision is emerging of the possibilities of man and of his destiny, and its implications are many, not only for our conceptions of education, but also for science, politics, literature, economics, religion, and even our conceptions of the non-human world.[5]

And even Russell, in one of his more optimistic moments, has contemplated such possibilities. He notes,

> There is no reason why in the ages to come the sort of man who is now exceptional should not become usual, and if that were to happen, the exceptional man in the new world would rise as far above Shakespeare, as Shakespeare now rises above the common man.[6]

Although we do not know how such development could be fostered, it is quite possible to select and make visible models who will give tone and direction to our society. Gardner contends that "Every good man strengthens society."[7] (However, a good man whose virtues and good works are unknown may contribute little.) Gardner also notes that this whole concern with good people may not be a popular one and that he recognizes it is unsophisticated to say good men make a difference (or to care if they do). Yet, he continues, "Men of integrity, by their very existence, rekindle the belief that as a people we can live above the level of moral squalor."[8] He feels that America particularly needs such models, for ". . . democracy requires a certain optimism concerning mankind."[9] It would seem that if our schools would call attention to such people, it would become clear to our youth that our society honors men and women of this order.

References

[1] John W. Gardner, *Excellence* (New York: Harper and Brothers, 1961), p. 136.

[2] Pitirim A. Sorokin, "The Powers of Creative Unselfish Love," Abraham H. Maslow (ed.), *New Knowledge in Human Values* (New York: Harper and Brothers, 1959), pp. 10-12.

[3] Alfred N. Whitehead, Preface to Wallace B. Donham, *Business Adrift* (New York, Toronto, London: Whittlesly House, McGraw-Hill Book Co., Inc., 1931).

[4] Gardner, *op. cit.*, p. 152.

[5] Abraham H. Maslow, *Toward a Psychology of Being* (Princeton, New Jersey: D. Van Nostrand Co., Inc., 1962), p. 177.

[6] Bertrand Russell, *Human Society in Ethics and Politics*, 1952, quoted in Dennis Gabor, *Inventing the Future* (New York: Aldred A. Knopf, 1964), pp. 198-199.

[7] Gardner, *op. cit.*, p. 153.

[8] *Ibid.*, pp. 153-154.

[9] *Ibid.*, p. 154.

Research Literature

Such models present the optimistic view of mankind. In bringing prototypic individuals to the attention of young people, the question of reality and a balanced view may arise but it is felt that the young people themselves can supply the leaven of pessimism. If such models are made more visible, perhaps adolescents will recognize the advanced levels of development and the idealistic value systems and use them as a basis for judging other (and perhaps more common) value systems and patterns of life. They will, hopefully, see these "type specimens"[1] as rare but important for setting a direction of growth which is uncommon but desirable.

Americans, according to many social philosophers (Riesman, Henry, Jacob)[2] tend to be conforming, materialistic, and hedonistic, and the advertising and commercial interests which dominate the press tend to support rather than criticize such values. News stories all too often feature the trivial or the criminal in human beings rather than idealism--self-directed and sometimes triumphant. Further, mass media produces endless images of people who have no commitment. Our television heroes lack heroism and although the movie stars whose names are common currency may lead la dolce vita, the question must be asked as to whether this is the "good life" and if such men and women will help us produce the "great society." Modern fiction* seems to portray more psychological illness than health and psychologists have typically dealt with the emotionally ill.

However, in the past decade many social scientists (and especially certain psychologists)[3] have tired of concentrating on the maladaptive. They have begun to make intensive studies of people selected by their peers as creative and productive. This research will be reviewed since it offers insights into motivation, psychological health, and intellectual development. These insights are tentative, however, since in spite of much work in the last ten years, the research volume is still limited. Most of the original and effective individuals selected for such studies have been men; only a little of the research has been concerned with creative women.

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*Fortunately, there are biographies of individuals who are socially contributive.

Roe[4] and Eiduson[5] have made reports on the background and on the personality characteristics of male scientists. The extensive studies of the MacKinnon, et al[6] at the Institute for Personality Assessment and Research (IPAR)* have included not only research scientists but creative writers, women mathematicians, graduate students, medical students, architects, military officers and personnel. McConnell, Heist, and others[7] at the Center for the Study of Higher Education** have been studying college populations to determine creative and scholarly predispositions as well as to examine the students' value systems.

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It is apparent from these researches and others that individuals who produce in ways that are highly valued by their societies are also gifted intellectually. However, we do not have a complete picture of creative predisposition or performance. Most of the studies have concentrated on male subjects and when the kind of creative qualities studied are examined, there appears to be an emphasis on the scientific content category. Guilford has said that his "hypotheses have been derived with certain types of creative people in mind: the scientist and the technologist, including the inventor."[8] It may be that at the level of moderate creativity there are greater sex differences than with the highly creative. The men who are creative but not truly barrier breakers may fall into more typical sex roles--somewhat more unusual in their scientific abilities and theoretical orientation but less able to express themselves or to perceive in ways that are termed feminine.

There is a lack of understanding of these more feminine perceptions--openness, receptiveness, awareness. This deficit directly relates to other lacunae in psychological knowledge, particularly the lack of a psychology of women and of knowledge of creativity in women. For example, the conclusions as to how the modernately creative woman differs from the moderately creative man must be largely inferential at this point. But descriptions of these women show them to be aesthetically oriented and intuitive in their thinking, and different also from the men in their capacity for experiencing and being. It seems reasonable to conclude that in Western society men and women manifest creativity differently and that women do not get the same amount of recognition for their creative predispositions and products as do men.

Despite these emphases on scientific creativity in men the recent studies made by IPAR indicate the importance of the aesthetic, intuitive, and subjective dimensions for highly creative men in a variety of fields. Highly creative women mathematicians in an IPAR study showed high achievement drive, theoretical orientation and other qualities often thought of as masculine.[9] Thus, highly creative men and women have much in common and have a wide range of values and capabilities, encompassing both masculine and feminine characteristics.

In reviewing the range of studies in creativity it becomes apparent that practically none has included the dimension of social creativity--humane and altruistic attitudes and behaviors. This is a dimension which we expect to find in the creative expressions of women[10] but which has not been carefully explored for either sex. There is considerable evidence that social conscience and other more feminine qualities are considered relatively unimportant in an aggressive, achieving society.[11] However, it is held in this study that the most highly developed individual has this quality of humane concern and other qualities which have been typically denoted feminine as well as the more masculine traits of independence and achievement drive. This self-actualized individual has been seen by Maslow as relatively rare and as having an unusual and complex personality. As Maslow says, "In these healthy people we find duty and pleasure to be the same thing, as are also work and play, self-interest and altruism, individualism and selflessness. We know they are that way, but not how they get that way."[12]

References

[1] Maslow suggests that we must be like "the taxonomist (who) chooses for his 'type specimen' of a new species, the one to be deposited in a museum, to be the exemplar for the whole species the best specimen he can get, the most mature, the most uncrippled, the most typical of all the qualities that define the species." (Abraham H. Maslow, *Toward a Psychology of Being* Princeton, New Jersey: D. Van Nostrand Co., Inc., 1962 , p. 161.)

[2] Jules Henry, *Culture Against Man* (New York: Random House, Inc., 1963).

Phillip E. Jacob, *Changing Values in College* (New York: Harper and Brothers, 1957).

David Riesman, *Abundance for What?* (New York: Doubleday and Co., 1964).

[3] See Introduction to Maslow (*op. cit.*) in which he refers to the third force in psychology.

[4] Anne Roe, *The Making of a Scientist* (New York: Dodd, Mead and Co., Apollo Editions, 1952).

[5] Bernice Eiduson, *The Scientists: Their Psychological World* (New York: Basic Books, 1962).

[6] A variety of papers representing their work are available in the publication, *The Creative Person* (A Conference Presented at the Tahoe Alumni Center, October 13-17, 1961). The Institute of Personality Assessment and Research, University of California, Berkeley.

[7] T. R. McConnell and Paul Heist, "The Diverse College Student Population," Nevitt Sanford (ed.), *The American College* (New York: John Wiley and Sons, 1962).

[8] J. P. Guilford, "Creativity," *The American Psychologist*, Vol. V, No. 9, (September, 1950) p. 451.

[9] Ravenna M. Helson, "Creativity, Sex and Mathematics," *The Creative Person* (A Conference Presented at the Tahoe Alumni Center, October 13-17, 1961), The Institute of Personality Assessment and Research, University of California, Berkeley.

[10] There seems to be no doubt that women are more humane and altruistic, at least on the person-to-person level. Allport's studies and others have shown this conclusively. Men--including some of the outstanding scientists--are perhaps less concerned about human relations and are not apt to be greatly concerned in their work with the welfare of humanity. However, Anne Roe indicates that the situation must change, ". . . scientists are now being forced to consider the social repercussions of their work." (*op. cit.* p. 232,233) Thus even these creative adults may lack some of the qualities of our ideal man.

[11] Florence Rockwood Kluckhohn (quoted in "The Problem that Plagues Thoughtful Women," *Redbook* February 1964, pp. 92, 94), lecturer on Sociology in the Department of Social Relations at Harvard, points out that "Man's occupational role is an action-oriented one which expresses well the *doing* orientation, while in woman's role it is expected that much more attention will be given to all those things--intellectual, aesthetic, and the moral which busy men so often define as the nice, nonessential embroidery of American life."

Alan W. Watts (quoted in *Ibid.*, pp. 92, 94), feels that we undervalue what is figuratively and poetically feminine. As he says, "Modern man has turned his back upon the typically feminine aspect under which he reaches the creative fountain of his own inner being." Dr. Watts believes that there is both a male and female kind of *attention* or sensitivity. Women tend to have a "kind of generalized sensitivity"--male attention is concentrated, sharp, and conscious. He feels that it is unfortunate that the "floodlight" kind of perception is grossly undervalued in our society. Men freely admit that women may have a particular affinity for grasping relationships, for insights into situations--but they seldom seem to consider these qualities of primary importance.

David McClelland, *The Achieving Society* (Princeton, New Jersey: Van Nostrand, 1961).

[12] Abraham H. Maslow, "Psychological Data and Value Theory," *New Knowledge in Human Values* (New York: Harper and Brothers, 1959), p. 132.

Research Related to Development of Present Study

In the preliminary research* we have been able to identify three rather distinct value systems or achievement drives in young people. These type-profile descriptions have been designated as creative intellectual, studious, and social leader. Through our extensive study of their interests, values and attitudes (using observations, interviews, questionnaires, and attitude, personality and value scales) we have found rather clearly marked differences among the three groups. This earlier study, as well as the present research had as its primary focus the creative intellectuals. Both studies indicate a surprising congruence between statements made by these creatively-inclined adolescents and the recognized-as-creative adults.

Within this creative intellectual subculture both the boys in our studies and the men in other research frequently show an aesthetic sensitivity and awareness that might be called feminine.

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*Elizabeth Monroe Drews, "A Study of Non-Intellectual Factors in Superior High School Students," Cooperative Research Study, No. E-2.

They all have a bit of the poet and philosopher about them and at least some of the men and boys are humanely concerned and surprisingly lacking in prejudice. This is apparent in scientists and mathematicians(fledglings and mature) as well as in artists, writers, and musicians. The creative women who are recognized for their achievements are similarly complex. Many of them are willing to break with convention and become intellectual, independent and determined (qualities often thought to be masculine), and most remain aesthetic, humane and intuitive. There appears to be a companion group of girls with the same inclinations. It may well be that the adolescents, especially the girls, are more altruistic and socially concerned than their adult counterparts. Certainly these are idealistic young people and the information on this point, cited earlier in the creativity study, is less clear for the adults. Perhaps with the proper encouragement these young people could develop beyond intellectual excellence and perhaps begin to approximate the interests and attitudes of Maslow's self-actualizing adults.

The stand taken in this paper is that the most highly developed person is a complex individual, simultaneously masculine and feminine, independent and sensitive, a feet-on-the-ground realist, and a head-in-the-clouds idealist living in the past, present and future and vitally concerned with the enhancement of the state of man and his affairs. Sorokin has commented to the effect that the great contributors in the past have been particularly concerned with this enhancement of man, and in his study of a contemporary group, Maslow has described certain adults who approximate this idealized image. These people are philosopher-generalists--but not just passive contemplators--for all have made positive contributions to the welfare of man, to their immediate social order, and to the world.

We must ask if it is possible to improve our educational and counseling programs so that the young people who have predispositions to develop creatively, intellectually and morally will receive the necessary stimulation and encouragement. In order that more students will reveal such desirable characteristics it was the thesis of this research that a specific program (which presented creative and scholarly role models on film and the parameters of knowledge and critical issues of our times in a flexible text) designed to produce such change would be effective.

Ideally such a program (which would contribute to the maximum development of the young person) would (1) supply exposures to many experiences and to the important ideas and issues of our times, (2) foster an aesthetic sensitivity and an openness to experiencing with all the senses, and (3) develop faith in humanity and concern for both the natural and human worlds. We hypothesize that such beginnings (resulting from deliberate educational intervention) may help the individual to become a more fully developed person. We further conceive this ideal as a broadly educated generalist who is more at home with theory than with details or facts, who is sensitive to new problems, creates new solutions for old ones, combines affect with intellect, and embraces work with devotion. Above all the program should bolster in the young person a capacity for psychological growth so that he becomes a continually changing, growing person with deep concern for his society.

The Problem and Aims

It seems apparent that educators and social scientists need to explore much more fully the special needs and characteristics of the adolescent, both in theoretical and research treatments. The typical adolescent is at the unique stage where he has not quite completed childhood but is already beginning adulthood; that is, he is still grappling with the fulfillment of early, nurturant needs, while at the same time he is developing the values and complex cognitive skills which he must use as an adult in an increasingly demanding world.

Our present knowledge is particularly inadequate when it comes to describing and understanding these higher-order cognitive needs and their role in the development of the whole individual. The development of such intellectual processes as critical and analogic thinking is particularly important in the case of the gifted adolescent.[1] These are the young people who show a readiness and an eagerness to deal with abstractions and complexities, and their education will be less than adequate if we do not try to understand their motivations and behaviors in dealing with ideas. We must challenge cognitive structures--conception of self and of the world and ethical principles--that students have accepted unthinkingly and which have not come from their own experiences and thoughts. Further, the larger society will suffer if our most able youth cannot develop their full potential. Higher level abilities, and especially the ability to use logic and scientific method, are increasingly important in an age of burgeoning knowledge and technological virtuosity. If these skills and mental processes are to become increasingly important for successful contribution to society, then it becomes correspondingly more important for us to understand how they develop and how they may be encouraged.

It is all too apparent that a greater understanding of the gifted adolescent (which might come about as a psychology of individual development is developed) is needed if we are to help the young to understand themselves and respond in constructive and creative ways to the rapidly expanding, changing world. The basic research remains to be done and theories wait to be developed, but progress in this direction may be slow since there is a dearth of competent research people who have such interests. However, direct forms of action can be taken immediately--program changes which will benefit both the adolescent and his society can proceed simultaneously with the research and the theory making. In the present research it was felt that the courses which have been designed for vocational guidance have often failed to take into account the abilities and motivations of gifted young people, the shifting pattern of social events and needs, and the implications involved in the new demands of technology.

In many ways, the traditional career guidance approach which involves the simple description and classification of occupations--a methodological legacy from the days when trades were well-defined--has long been obsolete in terms of providing useful guidance to the gifted young person. This is true for at least two reasons. First, the career picture is changing so rapidly, especially at upper levels, that it is virtually impossible to keep up with current social needs and technological breakthroughs, much less predict what these will be by the time students are ready to enter their careers. Second, rapid expansion has resulted not only in the creation of entire new fields of endeavor, but also in a vast expansion of the kinds of work involved within a given occupation. Thus it is no longer meaningful to talk about medicine or law simply as careers.[2] These terms, which might once have had descriptive value in specifying the kind of work an individual did, are now merely descriptive in a highly general sense of subject matter. They say very little or nothing about how an individual works, what skills he employs, or even the scope of his activity. It seems quite necessary and inevitable that occupational exploration become psychologically based as Samler[3] has suggested.

It seems mandatory, with this ever-increasing complexity of careers and because certain conceptions such as style of life have been neglected in career courses, that new approaches be taken in guidance for able adolescents. It is necessary that our college-bound young people have these understandings and begin to know how work can be, in Havighurst's terms, an ego-involving activity.[3a] They will know that work and play are often indistinquishable if one's commitment to long-term goals is very strong. They will also need to develop flexible ways of thinking and a willingness to change directions or even tasks as the social and economic picture changes. This means that able adolescents should delay career choices well beyond the level of junior high. The choice instead should be that of continuing to learn and grow; e.g., by deciding to go to college or graduate school and by remaining curious and open to possibilities. At a time when there is an urgent need for qualified persons with a breadth of skills and knowledge, we should not be encouraging our most gifted young people to a premature and limited channeling of their efforts.

From the viewpoint of the educator and the counselor there is an obvious need to understand better and to communicate to the student the broad dimensions which descriptively undercut a wide range of careers; e.g., theoretical innovation, application of old principles to new fields, information coding and organization, social concern, management of human potential, artistic or philosophical expression, etc. There is a parallel need for new methods of diagnostic evaluation of career potential. These might eventually be formed along lines similar to many existing instruments developed in the area of personality psychology--measures of individual thinking styles, attitudes, styles of work, etc. Finally, there is the need for a broad orientation for the career guidance program which views the careers expressly in the context of the more basic values and attitudes which determine the entire mode of a given individual's life.

Attempts have been made to adapt and revise curricula with the changing times, but even this has presented further problems in formulating an education which will foster development of thinking abilities and of an individual identity on the part of each adolescent. Like an explosion set off by the abrupt advent of Sputnik, social awareness of the importance of science and technological advances led educators into feverish expansion of the science curriculum, often at the expense of the humanistically and artistically oriented courses once prized as the core of a liberal education.* Only now in the aftermath of this explosion are educators and other thinkers beginning to ask questions about the value of our greatly expanded scientific knowledge in the relative absence of wisdom about what to do with it, e.g., how to live in graceful and self-fulfilling ways.**

Teachers themselves have not escaped the results of the sudden emphasis on specialization and technology. Many teachers--and especially the more conscientious and able ones--have felt strongly the pressure to keep up with current advances and expanding knowledge, and have consequently been forced to neglect more humane concerns, much as the family doctor has given way to the specialist in an era of medical breakthroughs. The result has been an abundance of teachers, especially in the secondary schools, who are much more concerned with _what_ they are teaching than with whom they are teaching. The typical secondary teacher does not have the psychological knowledge or the temporal latitude to help the student discover himself, the world, and the emerging inter-relationships. There is a need for a new kind of teacher--one whom might appropriately be called a "teacher-counselor-facilitator."[4] This individual would combine an understanding of curriculum and content with a knowledge of the student as a complex whole, and of the nature of the classroom discussion process and interaction. Such an individual would not only be a generalist who was concerned with the process of discovery and with broad human issues, but would also be a specialist who had competencies in an academic discipline.

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*Liberal education has as its aim the fullest possible development of the human personality.

**Much concern has recently been expressed that we are producing a generation of culturally deprived technologists with unprecedented know-how and very little know-why.

Within a framework of rapid change, the more sensitive student has become dissatisfied with a situation which makes it extremely difficult to gain understanding of the broad picture, and to assign values to knowledge which is being presented in an increasingly compartmentalized manner. Bewildered by the profusion of disciplines which he is forced to sample from the curricular smorgasbord, and sensing the rapidity of the changes all around him, the gifted student, with a desire to achieve some sort of gestalt and assign meaning to the knowledge he is ingesting, is frustrated. Unless patterns for organizing knowledge and systems for understanding the world are presented to him the student will not have a unity of understanding which can be the basis for rational, responsible choice. It is necessary, of course, to involve the student in his own education but he is not ready to take complete responsibility for reaching the larger understandings.

Not only does the student have difficulty in finding order and meaning in the world around him, he also encounters difficulty in discovering his own unique place in the scheme of things. The problem of identity formation plays a central role in adolescence. The adolescent must take up a position with respect to the world around him; that is, he must find out what he believes in and what he values. In order to do this he must have knowledge which he can retrieve and use. Knowledge does not usually become viable for the student unless it has appeal, is coherently presented and, most importantly, there is opportunity for each student to put it into his own terms. He must also be capable of critical evaluation and mature judgment. Too often educational programs do not provide an atmosphere or a training ground for the development of this kind of process.

The patterns of education and the needs of our society presented up to this point reflect largely the current patterns, i.e., a technological emphasis and an orientation toward theoretical and abstract thinking. However, the full development of any human being embraces much more than this. Each individual has aesthetic and humane dimensions (often non-verbal in nature) which must mature if he is to become self-actualizing. Girls particularly are drawn toward these "primary" patterns of thinking and ways of experiencing. However, there has been a lessening of emphasis on liberal arts in the curriculum and particularly as these touch on the fields of music, drama, art, and literature, and an increasing emphasis on the technological and the scientific.

This has been happening at a time when at least two striking changes are occuring in our society. Leisure time is for the first time in plentiful supply and rapidly becoming a surplus commodity--one that demands planning and preparation if it is to be well spent--and there is a growing interest in and willingness to take action on human problems.[5] In general terms this can be described as an increase in public morality. However, these aesthetic and humane dimensions must be deliberately built into the curriculum if all students, and especially the girls, are to lead better, richer, and more exciting lives. Such a venture--and the encouragement of girls to exercise their full potential emotionally and intellectually--is a sharp departure from present patterns. Thus, a new program must have two quite unusual but complementary objectives. Both boys and girls must become receptive to a wide range of experience (and aware of aesthetic nuances), and both must become open to the possibilities that girls can and must become self-actualizing.

In an effort to understand the problems of education in this area, it is of course necessary to keep in mind the importance of the totality of the environment with which the adolescent must deal--the family, peer and community cultures with which he comes into everyday contact, and which have a role in shaping his environment for good or for ill. In this regard it is somewhat startling to realize that the environmental influences, if not the environment itself, with which a large proportion of our adolescents come into direct contact can only be described as providing no ready access to aesthetic and cultural experiences. To understand this better, the general social-cultural milieu of the city of Lansing, in which this study was undertaken, will be surveyed.

Lansing is a midwestern city with a population of about 130,000; the greater metropolitan area contains approximately 345,000 population. The major economic force in Lansing is the motor vehicle industry which, as recently as 1958, accounted for 83 per cent of the total manufacturing output.[6] Government spending (Lansing is the state capital) is the second major economic support; this occurs primarily on the state level. The third major economic force in the Lansing area is Michigan State University, which not only employs a large number of people, but also contributes nearly 40,000 students (at all degree levels) to the general consumer economy. It is the University, together with the state government, which accounts for a large number of the professional and white-collar workers in the area; it should be noted, however, that most of the university faculty make their home in East Lansing rather than Lansing proper and thus there may be less direct influence of the University upon Lansing young people than one would expect.

Other than these three major concerns, there are few other industries or occupations which have major effects on the Lansing area's economy, or which employ a large proportion of people. This situation creates a certain narrowness for the adolescent in terms of the diversity of career opportunities and life experiences to which he is exposed. The typical adolescent boy or girl has come into contact more or less exclusively with adults who are in the same occupational category as his parents, or else are his teachers. In itself this is not likely to make him aware of the wide variety of career choices which are available.

Economically and educationally the Lansing citizen is well-off. The per capita income for the Lansing area in 1958 was 106 per cent of the national average.[7] In 1959 the median school years completed for parents of a sample of 331 Lansing students of average ability was 11.5 for fathers and 11.8 for mothers[8] as compared with a national median of 8.5 in 1950.[9] There is a wide range of available recreational and cultural opportunities; and the bordering city of East Lansing offers outstanding programs of an aesthetic and intellectual nature in connection with Michigan State University. Lansing itself has many active church groups, a little theater group, an auditorium, a symphony, both a YMCA and a YWCA, a Jewish Community Center, Scout activities, several motion picture theaters, recreational facilities such as bowling alleys and one of the most highly developed park systems in the country. Specimen gardens and an arboretum are available at all times and art exhibits are held frequently.

However, despite the apparent richness of this environment most of the able students in the Lansing schools have had little contact with the aesthetic and intellectual realms. In contrast, the recreational opportunities (Lansing is near a number of lakes and wooded areas) are used extensively. Most families seem to be able to participate in some form of recreation and few lack clothing or food--students tend to be well fed and physically fit. However, they are more apt to know how to catch fish than to be able to identify the surrounding flora and fauna, and they probably understand motorboats better than they do classical music.

Despite the fact that many able Lansing students do not participate in cultural events, most are aware of the arts and would like to become consumers in this area. The problem seems to be that they do not know how to engage in the culture about them.

There appears to be a lack of the parental encouragement for participation in or sampling of the aesthetic and intellectual offerings of the community. Students take music lessons but they do not listen to good music. In a survey of 37 ninth grade students in an accelerated English class in the Lansing school system, made in May, 1964, it was found that 43 per cent of the boys and 26 per cent of the girls had never attended a symphony, although 64 per cent of the boys and all of the girls reported that they would like to. Similarly, 80 per cent of the boys and 91 per cent of the girls had never seen a ballet, although 50 per cent of the boys and 96 per cent of the girls evidenced a desire to attend.

Summary

The problems of major concern as far as the understanding of educators, teachers, and counselors are concerned may be summarized as follows:

1. Need for a greater understanding of the gifted adolescent and the way in which he develops. In particular, knowledge is needed about the higher-order cognitive processes as they relate to the educational experience and to the development of the whole individual. Insight is also needed into the nature of the attitudes and values of the adolescent--including his motivation to learn--and the other factors which influence the learning process.

2. Need for a new approach to the teaching of the vocational guidance course, reflecting both the rapid and far-reaching changes in society and the particular needs of the able adolescent.

3. Need for a new conception and implementation of the role of the teacher-counselor, including a greater concern for the adolescent as a complete person. This new teacher-counselor is seen as a generalist who is able to think critically, to formulate theories of knowledge, and to give pattern to his world.

In terms of the special needs of the adolescent, the following problems may be identified:

1. Needs self-awareness, i.e., to know his own potential, and to want to develop an individual identity and a distinctive style of life.

2. Needs to be knowledgeable of the large number of areas of knowledge and cultural opportunities which are available, to receive encouragement to explore these, to set them into meaningful terms, and to assimilate and choose from them critically and responsibly.

3. Needs (beyond the mere awareness of possibilities) to be eager, responsive, and seeking--to take the innovative approach rather than the defeatist attitude when confronted with limitations.

The study to be reported was aimed at gaining a greater understanding of the problems described above, and in addition represented a preliminary attempt to determine how such processes can be influenced by new approaches and ideas in curriculum, teaching methods and classroom interaction processes.

References

[1] We need to supply growth motivation or stimulation for the very able student. With reference to Maslow's distinction between the "deficiency motivated" individual and the "growth motivated" individual (Abraham Maslow, *Motivation and Personality*, New York: Harper Brothers, 1954), the superior student is seen as "growth motivated"; his "lower level needs" are usually satisfied in the schools, but this does not mean that we are supplying adequate motivation. This approach to the understanding of the gifted adolescent was used in a previous study (Elizabeth Monroe Drews, "The Effectiveness of Homogeneous and Heterogeneous Grouping in Ninth Grade English Classes with Slow, Average, and Superior Students," Cooperative Research Project No. 608).

[2] E. C. Hughes in *Men and Their Work* (Glencoe, Illinois: The Free Press, 1958), takes a sociclogical view of careers and particularly how each is affected by the individual and his style of living.

[3] Joseph Samler, "Occupational Exploration in Counseling: A Proposed Reorientation," in Henry Borow (ed.) *Man in a World at Work* (Boston: Houghton Mifflin Co., 1964), pp. 411-434.

[3a] Robert J. Havighurst, "Youth In Exploration and Man Emergent," seen in *Ibid.*, pp. 232-233.

[4] Lawrence Cremin (Lawrence A. Cremin, "The Progressive Heritage of the Guidance Movement," *Harvard Graduate School of Education Association* bulletin, Vol. VIII, No. 4, Winter, 1964, pp. 1-5), and Edward Shoben (Edward Joseph Shoben, Jr., "Guidance: Remedial Function or Social Reconstruction?," *Harvard Educational Review*, Vol. 32, No. 4, Fall, 1962, pp. 430-433), have agreed that counselors must be trained in broadly humanistic terms in order to be able to give adolescents assistance not in the remedial sense or in the sense of helping them to choose careers but (knowing the students as complex and total persons), in contemplating and choosing patterns of life.

[5] Erik H. Erikson, "Youth: Fidelity and Diversity," *Daedalus*, Winter, 1962, pp. 5-27. Erikson suggests that some young people may feel that contributions to a world brotherhood may be more socially useful than their own technical competencies.

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[6] John L. O'Donnell et al., *Economic and Population Base Study of the Lansing Tri-County Area, An Interindustry Relations Analysis* (East Lansing: Bureau of Business and Economic Research, College of Business and Public Service, Michigan State University), Library of Congress Catalog No. 60-62883.

[7] O'Donnell, *Ibid.*, p. 28.

[8] Elizabeth Monroe Drews, "The Effectiveness of Homogeneous and Heterogeneous Ability Grouping in Ninth Grade English Classes with Slow, Average, and Superior Students," Cooperative Research Project No. 608, p. 64.

[9] O'Donnell, *op. cit.*, p. 22.

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SECTION II

PROCEDURE, POPULATION, INSTRUMENTS, RESULTS, DISCUSSION

PROCEDURE

Design

Four junior high schools* in Lansing, Michigan, were involved in the experiment Each school provided a counselor or teacher-counselor (referred to in this report simply as a teacher) who was considered by the school administrators to be a good teacher. These four persons,** one woman and three men, carried the teaching responsibility for the project. Each of the four had two groups, one control class and one experimental class, of superior ninth grade students. Both the control and experimental groups met daily during regularly scheduled class periods for five months.

Selection of the Sample

The students in the sample were selected on the basis of their reading comprehension scores on the California Reading Test, Advanced Form. All those were included who scored at least two years above their grade level, that is, all those who read at eleventh grade level or higher in May, 1962. In June, 1962, the 243 students who had been selected were assigned randomly to an experimental or control class by the assistant principal in their school. Table F 1 reports the final or minimum sample of students for whom all major data were completed, as well as a larger or maximum sample which includes other students originally selected but for whom complete test data could not be obtained.

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* C. W. Otto, Pattengill, Walter French, and West junior high schools.

**Jack Riley at Otto, Kay Howell at Pattengill, John Leonard at Walter French, and Calvin Anderson at West.

TABLE F 1

MAXIMUM AND MINIMUM SAMPLES BY SCHOOLS AND BY BOYS, GIRLS, TOTALS IN EXPERIMENTAL AND CONTROL GROUPS

	Boys		Girls		Total	
	Max.	Min.	Max.	Min.	Max.	Min.
Experimental						
Otto	9	6	20	15	29	21
Pattengill	13	13	20	18	33	31
W. French	16	14	14	14	30	28
West	20	15	12	8	32	23
Total	58	48	66	55	124	103
Control						
Otto	8	7	18	14	26	21
Pattengill	13	9	20	18	33	27
W. French	13	7	15	14	28	21
West	16	15	16	11	32	26
Total	50	38	69	57	119	95
Total Sample	108	86	135	112	243	198

Description of the Sample

Reading Comprehension (Table F 2): Reading comprehension, the basis for selection of students included in the study, was assessed by means of the California Reading Test, Advanced Form. The scores ranged from 11.0 (the selection criterion) to 16.5 for the control group, and from 11.0 to 14.7 for the experimental group. The means were very similar, as the control group averaged 12.27 on this test and the experimental group averaged 12.32.

TABLE F 2

MEANS FOR GRADE LEVEL SCORES ON THE CALIFORNIA READING COMPREHENSION BY BOYS, GIRLS, TOTALS IN EXPERIMENTAL AND CONTROL GROUPS

	Experimental	Control
Boys	12.25	12.39
Girls	12.38	12.20
Total	12.32	12.27
Range	11.0 - 14.7	11.0 - 16.5

Intelligence (Table F 3): Verbal scores on the California Mental Maturity were used as measures of intelligence. These scores for the control group on the CMM ranged from 97 to 159 with a mean of 122.31, and for the experimental group ranged from

100 to 145 with a mean of 123.38. Since the students in these classes were chosen on the basis of a minimum of eleventh grade level achievement on the California Reading Comprehension, rather than on the basis of minimum intelligence scores, the mean intelligence sco scores may be lower than would ordinarily be expected of an intellectually superior population.

TABLE F 3

MEANS FOR VERBAL IQ'S ON THE CALIFORNIA MENTAL MATURITY BY BOYS, GIRLS, TOTALS IN EXPERIMENTAL AND CONTROL GROUPS

	Experimental	Control
Boys	122.58	122.26
Girls	124.06	122.35
Total	123.38	122.31
Range of IQ's	100 - 145	97 - 159

Aptitude (Table F 4): On the Differential Aptitude Test, the ranges for the control and experimental groups were identical--25 to 99. The means for the groups were slightly different, however, with the control group averaging 81.85 and the experimental group averaging 83.35.

TABLE F 4

MEANS FOR PERCENTILES ON THE DIFFERENTIAL APTITUDE TEST BY BOYS, GIRLS, TOTALS IN EXPERIMENTAL AND CONTROL GROUPS

	Experimental	Control
Boys	83.33	81.07
Girls	83.38	82.37
Total	83.35	81.85
Range	25 - 99	25 - 99

Family Background (Table F 5): Additional descriptive information such as parents' education, socio-economic status, and family size was acquired from pupil questionnaires, school files, and occasionally, from interviews with teachers, administrators, and parents. Examination of these data shows that parents' educational level was not significantly different for the two groups. Fathers of students in both the experimental and control groups had generally had some college, business, or technical training, while the mothers of students in both groups had, on the average, probably completed the twelfth grade. The median socio-economic status, when the father's occupation was the criterion (using Warner's Index of Status Characteristics), for students in both

TABLE F 5

MEANS AND MEDIANS FOR PARENT EDUCATION, SOCIO-ECONOMIC STATUS, AND FAMILY SIZE IN EXPERIMENTAL AND CONTROL GROUPS

	Experimental		Control	
	Mean	Median	Mean	Median
Father's Education[a]	4.9	5	4.8	5
Mother's Education[a]	4.59	4	4.44	4
Father's Occupation[b]	3.17	3	3.45	3
Family Size[c]	3.0	3	2.9	3

[a] Scale for Level of Education

1. Less than seventh grade
2. Through grades seven or eight
3. Through grades nine or ten
4. Through grades eleven or twelve
5. Some college, business or technical training
6. Finished college
7. Attended graduate or professional school after college
8. Received an advanced degree

[b] Scale for Warner Index of Status Characteristics

The range consists of "1" (high level professional or business executive) to "7" (unskilled labor or domestic servant).

[c] Family size refers to the number of children in the family

the experimental and the control classes was 3. The mean socio-economic status for the experimental group was 3.17 and for the control group was 3.45. The median family size for students in both groups was 3 children.

Discussion: The sample selected for the project could be described generally as intellectually superior, as measured by California Mental Maturity tests and the Differential Aptitude Test. Most of the students belonged to relatively small families, and their parents most commonly were middle class and had a high school education.* The experimental and control groups were quite comparable, and did not differ appreciably on any of these measures.

Experimental Treatment

The experimental treatment began with a two months' introduction to the complexity and multiplicity of today's world.[1] This introduction consisted of a film, a specially designed textbook, other reading materials and much free discussion. At the outset the students viewed and discussed the film introducing the philosophy of the new course and following this they were given the "Four Worlds" textbook.[2]

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*In ten years of research on the academically superior students in the Lansing schools, we have found that a great majority of the gifted students, like most Lansing students, are white assimilated Protestant Americans.

The introductory film featured four gifted college students who discussed ways in which intellectual and creative activities held excitement for them, how they posed questions, and, in some cases, arrived at original answers. These interchanges were fitted into the general context of the new course by a commentator. The aesthetic dimension was particularly stressed, and it was suggested that each individual was responsible for shaping a meaningful existence within any or all of the worlds.

Multilithed copies of the text, one world at a time and in loose-leaf form, were presented to the students. Every two weeks a new world was introduced. Although the book had brought many diverse materials together into a pattern--four worlds--there was also much flexibility. Each student was encouraged to add new dimensions, new worlds, to delete parts, to criticize, and to alter the structure of the text so that the end product might represent the world as he saw it--his own private cosmology.

Magazines and other source material were brought into the classroom for the students to read or to clip. Reading in biographies, fiction and non-fiction was also encouraged. Annotated bibliographic cards (cataloguing available biographies, essays, and novels) had been prepared by a group of bright ninth graders during the pilot year of the experiment, 1961-1962, and a set of these was made for each experimental classroom. Large files of magazine articles and other publications, the originals of the extracted materials in the textbook, were also available. Although there was encouragement to read, easy access to materials and much reading on the part of students, discussions were always the heart of the class activities. These centered on all kinds of questions, issues, and concerns that arose from the reading, the films, and from the students themselves.

After spending two months developing this textbook and facing the problems of a multi-faceted world the student was asked to consider himself, who he was, and how he might develop a meaningful life pattern in such a complex world. Pervading this study was an effort to foster in each young person an awareness of self and a sense of personal responsibility for developing an identity. For many this was the first time that certain Greek proverbs such as "Know thyself" and "the unexamined life is not worth living" had been made explicit.

Following the introduction of the text, the first film was again shown. For the second showing it had been lengthened by a series of sequences presenting the eight models (four men and four women) who were to appear later, each in a documentary-biographical style-of-life film. These films introduced students not only to high level technical and professional careers, but also to the growing edge of knowledge, the changing nature of each career, as well as to topics of crucial interest in our times. All of the models showed a high level of intelligence, imagination and social concern and thus met the three-part criterion for selection.

Since an important aspect of this research, beyond attempting to produce change in the students toward the creative intellectual norm, was to increase the acceptance by both boys and girls of self-actualizing women and of moral and humane approaches to life, an effort was made to present patterns other than the usual male and female stereotypes. For example, virile looking men who also were philosophers, scientists, and artists discussed their interest in the arts, commented on early interest in reading and writing poetry, and particularly they expressed their concern for human well-being. With the women an effort was made to reduce typical prejudice against women scholars and scientists. As a result we chose attractive, feminine women, at least two who were campus beauty queens. The folk singer had been active in politics and the other three models represented medicine, law, and research. All of these fields are felt to be typically male and yet the women who were performing very well in them were extremely feminine in their appearance and ways of working.

The first step in developing the films was to find individuals who exemplified, as far as we could tell from our initial interviews and from reading their books, the qualities of the creative, intelligent, and responsible prototype which we wanted to portray. Each model had many of these qualities and as a group they exemplified all of the qualities. As was noted above, the models were also attractive, pleasant people, who had good relationships with others. Beyond having the necessary qualities and the personal appeal, we tried to find individuals (and we feel that we succeeded) who could project their enthusiasm, involvements, wants, and attractiveness and could translate their often complex ideas into relatively simple terms. In other words, we chose people who could communicate.

These were the primary requirements, but there were other considerations as well. We wanted to present men and women who represented the major divisions--humanities, science, social science, and the arts--usually found at a university or liberal arts college. We wanted to show creative people with varying personalities and temperaments--introverts and extroverts, activists and contemplators. Finally we wanted to show people who varied in renown from the recognized-in-the-community to the internationally famous.

In summary, the film models were chosen for a number of qualities but particularly because they were attractive, psychologically mature, concerned, and approached their work in creative and original ways. Their careers are shown as an integral part of a fruitful life pattern, all aspects of which enhance and extend the central meaning. Throughout, the psychological concepts of being and becoming were stressed. The films were intended to present a cumulative picture of creativity--

various facets being represented by one or more model. Each model was shown as independent and self-motivated, and not overwhelmed by the complexities of the world or by uncertainty as to his own identity. It was hoped that students could thus become aware that human beings are not just pawns or victims but that they can, by making wise choices, do much to shape their destinies. A further objective was to give students a feeling that certain kinds of understandings, theories of knowledge, and larger meanings of a philosophical and aesthetic sort are possible even in a complex and ever-changing world. Further synthesis and accenting of key concepts is accomplished in the final film in which the eight models discuss in "small world" format, significant contemporary issues (particularly concern for the condition of mankind) and their personal opinions concerning the development of creative lives.

Description of Control Treatment

The control groups received the usual course in occupational planning, and all materials traditionally available for the class were utilized. Commercially prepared career films were presented and a textbook[3] concerning career planning was supplied by the school. Further, vocational guidance pamphlets were available and used in the preparation of the paper which each student wrote. This manuscript was a statement of the specifications, requirements, and the advantages and disadvantages of an occupation upon which the student was to have decided. In addition, a battery of interest tests were administered and the results interpreted to these students. The only ways in which the class differed from the usual presentation* were: 1) the class was homogeneously grouped according to academic ability (thus more than a normal amount of change might be expected to result from simply putting these able students together**), and 2) the teacher of the control group also taught an experimental group (thus the possibility of contamination cannot be controlled by this design).

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* The normal ninth grade careers-social studies course in the Lansing Public Schools.

**Previous research on the effects of ability grouping as reported in Elizabeth M. Drews, "The Effectiveness of Homogeneous and Heterogeneous Grouping in Ninth Grade English classes with Slow, Average, and Superior Students," Cooperative Research Project No. 608.

Instruments

Since it was hypothesized that this experiment would change the value systems, interests, and philosophies of able students toward the creative norm, we wanted instruments that would measure this change as well as possible. We used existing instruments--formal, standardized tests, which measured the attitudes and values involved in the experimental course, and we also developed our own instruments--the more informal measures which tapped areas in which no standardized tests were available. Pre- and post-testing were done on these instruments in both experimental and control groups during a two-week period set aside at the beginning and end of the term.

The formal measures included the Omnibus Personality Inventory (OPI), the Allport-Vernon-Lindzey Study of Values (A-V-L), the ACE Critical Thinking Test Form G, and the Rokeach

Dogmatism and Rigidity Scales. Five OPI scales were used: Originality, Complexity, Estheticism, Theoretical Orientation, and Thinking Introversion. Since other research[4] indicated that creative adults possessed to a high degree the qualities measured by these scales, it was hypothesized that the experimental group would increase more than the control on all the OPI scales used, on the theoretical and aesthetic values of the AVL, and also on the critical thinking. It was further hypothesized that the scores of the experimental group would decrease more than those of the control on the Rokeach Dogmatism and Rigidity scales.

The informal instruments were refinements of measures developed during a five-year period (1954-1959) of studying gifted adolescents. They included the Student Interest Survey Scales, the Reasons for Occupational Choice, the Student Profile Check, and the Ability Self-Concept rating. The Student Interest Survey (SIS) V was a questionnaire that elicited information on student family background, current interests and activities, attitudes toward school and learning, and plans for the future. Within this questionnaire were three scales comprised of items that had significantly differentiated (beyond .05) the responses of students identified (by the Student Profile Check) as "creative-intellectual," "studious," and "social leader" on previous surveys. Although we have no reliability information on the Student Interest Survey V, this form was derived from Student Interest Survey IV for which a Kuder Richardson 21 was computed on a group of 109 gifted fourteen- and fifteen-year olds. The internal consistency of these scales was: creative intellectual--.85, studious--.76, and social leader--.82.

The Reasons for Occupational Choice consisted of a checklist of nine possible reasons for choosing a career, with the students being asked to pick the three reasons most important to themselves. This instrument had been refined from a longer list of items which had previously been a part of the Student Interest Survey.

Each of the nine reasons had significantly differentiated students identified as studious, creative intellectual, or social leader on the Student Profile Check, with three of the choices identified as studious reasons, three as creative intellectual reasons, and three as social leader reasons. For the analysis, the nine items were combined in these groups of three in accordance with the student types.

The Student Profile Check is a set of three descriptions of student "types" (creative intellectual, studious, and social leader), which had been developed through much research with gifted students.* Students were asked to check the type of student that most adequately described them. A test-retest reliability of the Student Profile Check was done in the spring of 1962, after approximately a six-month interval (with no intervening experimental treatment), using tetrachoric r. The correlations for each of the types are as follows: creative intellectual--.81, studious--.83, and social leader--.91.

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* Elizabeth M. Drews, "A Study of Non-Intellectual Factors in Superior High School Students," Cooperative Research Study, No. E-2.

The Ability Self-Concept rating consists of a single question in which the students are asked to rate their ability in relation to their classmates as above average, average, or below average. This instrument had been used in a previous study concerned with ability grouping * and had significantly differentiated among students of varying abilities: the superior students rated themselves higher than the average students, and the average students rated themselves higher than the slow students. In addition, in research involving the Student Profile Check,** the creative intellectual group had rated itself significantly higher than the social leader or studious group.

It was hypothesized that the experimental group would increase more on the SIS V Creative Intellectual Scale, would pick more creative intellectual reasons for occupational choice, and would change more often to the creative intellectual profile of the Student Profile Check than would the control group. It was also hypothesized that, as measured by the Ability Self-Concept, a selected group of high creative students would rate their ability more positively than a selected group of low creative students,* and that the experimental group as a whole (due to an expected high valuation of creative intellectual interests) would consider themselves more able, in an intellectual sense, than would the control group.

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* Elizabeth M. Drews, "The Effectiveness of Homogeneous and Heterogeneous Ability Grouping in Ninth Grade English Classes with Slow, Average, and Superior Students," Cooperative Research Project No. 608.

**Elizabeth M. Drews, "A Study of Non-Intellectual Factors in Superior High School Students," Cooperative Research Study No. E-2.

In addition to the concern with guidance for gifted adolescents in general, the research was especially concerned with the gifted girl: how to make her aware of her creative potential, to encourage her in choosing a high level career, and to increase the acceptance (by both boys and girls) of women who do choose life styles that are commensurate with their abilities. The study was also directed toward developing much needed social concern and humanitarian beliefs (sometimes referred to as "feminine" qualities) among both boys and girls. To measure differences in this "Feminine Dimension," informal instruments developed by the investigator were again used; these included the Acceptance of Women Scale, Self-Actualization Levels of Women, and the Humanitarian-Altruism Scale, and were administered only at the end of the experimental year.

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*"High" creativity was defined as scoring at least one standard deviation above the mean on at least three OPI scales, with a parallel definition for "low" creativity.

The Acceptance of Women Scale was comprised of true-false items that asked for the testee's acceptance or rejection of statements of fact, opinion, and prejudice that are relevant to the diversification of women's roles. The scale contained both positive and negative items, and a high scorer was assumed to hold more favorable attitudes toward diversified roles and self-actualization in women than a low scorer.

The Self-Actualization Levels of Women was a set of three paragraph descriptions of girls concerned with many of the values involved in the Acceptance of Women Scale. The first description

(Level 1) described a "strictly female female" who did not plan to attend college; the second (Level 2) concerned a girl who planned to attend college for a year or two and then marry; and the third (Level 3) described a girl who wanted to graduate from college, perhaps attend graduate school, develop a separate identity, and contribute something to the wider world. Girls were asked to check the paragraph which described them best (really and ideally), while boys were asked to check the description most like the kind of wife they would have (really and ideally).

The Humanitarian-Altruism Scale was composed of items that asked testees to what degree they agreed (+1 to +3) or disagreed (-1 to -3) with statements presenting characteristically humanitarian-idealist or technologist-realist points of view.

It was hypothesized that the experimental group would score higher than the control on the Acceptance of Women Scale and on the Humanitarian-Altruism Scale, and also that they would pick Level 3 (the highest level) on the Self-Actualization

Levels of Women more often than the control group.

In addition to the instruments already described, certain free response materials such as essays, answers to open-ended questionnaires, interview records, book reports, and the personalized textbooks were studied. In these studies of the free response material, an effort was made to determine such behaviors that would indicate creative and critical thinking--openness to self and to the world (including a lessening of prejudice) and a development of humane altruistic concerns. Efforts were also made to determine these kinds of attitudes by studying the tape-recorded class discussions. However, due to a shortage of time and funds, this material has not yet been completely analyzed. The results will be reported in the final report of the extension of this proposal.*

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*Elizabeth Monroe Drews, principal investigator: "The Effectiveness of Special Training with Audio-Visuals in Changing Aspirations of Intellectually Superior Students--Extension," Grant 7-32-0410-222.

In summary, the following hypotheses have been tested:

1. It was hypothesized that the experimental students would become more accepting of creative values and that their own attitudes and interests would become closer to the creative norm than the control students. Formal measures used to test this hypothesis included five OPI scales, the AVL Study of Values, the ACE Critical Thinking Test, and the Rokeach Dogmatism and Rigidity Scales; the informal instruments used were the SIS V Creative Intellectual Scale, the Reasons for Occupational Choice, the Student Profile Check, and the Ability Self-Concept.

2. It was hypothesized that the experimental group would become more accepting of women in high level careers (this acceptance would include a broadening of the understanding and acceptance of the possible relationships and interaction between career and marriage for girls), and that the experimental girls would choose more self-actualizing life styles than the control. It was also hypothesized that the experimental group would show

a greater degree of social concern than the control group. These hypotheses were tested by the Acceptance of Women Scale, the Self-Actualization Levels of Women, and the Humanitarian-Altruism Scale.

References

[1] This need for an exposure to breadth and diversity in knowledge and the disciplines is seen as a necessity for the counselor as well as for the secondary student. In a recent publication, (Esther Lloyd-Jones and Esther M. Westervelt, eds., Behavioral Science and Guidance: Proposals and Perspectives, New York: Bureau of Publications, Teachers College, Columbia University, 1963; p. vi.), the authors comment in the forward, "Changes in institutional or community climate or educational arrangements may help student development far more than efforts at individual counseling, even if time and staff for the latter were available in unlimited quantities. . . . Education for the new variety of guidance and student personnel work clearly needs broader theoretical foundations than presently exist. Sociology, social psychology, anthropology, economics, and political science all have their places in guidance training, and added to these should be the insights which can come only from philosophy and the humanities."

[2] The Four Worlds--Natural Aesthetic, Human, and Technological were presented to introduce students to a wide range of knowledge and issues. These textbooks were individualized and open-ended--they might be described as "contemporaneous and personalized anthologies." Much of the material consists of excerpts and digests from articles of outstanding magazines but there is other material of more unusual nature including poems, cartoons, and apothegms. In a sense the most important pages of this book are blank. The printed pages serve only as a point of departure from which each student will complete his text according to his own interests, goals, and direction of development. Students may add what they desire--clippings from magazines and newspapers, and their own poetry, cartoons, drawings or critical commentary.

[3] Two textbooks were made available by the school system: George E. Myers, Little and Robinson, Planning your Future (New York: McGraw Hill Book Co., Inc. 1953) and Fred B. Painter and Harold H. Bixler, Citizenship in Action (2nd ed., New York: Charles Scribner's Sons). The teacher could use either or both as he chose.

[4] Paul Heist and Harold Webster, "Differential Characteristics of Student Bodies--Implications for Selection and Study of Undergraduates," Selection and Educational Differentiation, Report of Conference, Berkeley, May 25-27, 1959, Center for the Study of Higher Education, (Berkeley: University of California, 1959).

Donald W. MacKinnon, "Identifying and Developing Creativity," *Selection and Educational Differentiation*, Report of Conference, Berkeley, May 25-27, 1959, Center for the Study of Higher Education, (Berkeley: University of California, 1959).

Jonathan R. Warren and Paul A. Heist, "Personality Attributes of Gifted College Students," *Science*, Vol. 132, No. 3423 (August 5, 1960), pp. 330-337.

RESULTS

I. Creative Intellectual Values

A. Formal Measures

Omnibus Personality Inventory (Table G-1): At the end of the year, the experimental group was significantly higher (beyond the .05 level) on the Originality, Thinking Introversion, and Theoretical Orientation scales. These differences seem to be due primarily to differences appearing among the girls. Although no significant differences were observed between the boys' groups, the experimental girls were significantly higher than the control girls on Estheticism, Thinking Introversion, and Theoretical Orientation.

In the case of one scale (Theoretical Orientation), there were pre-test differences, with the total experimental group scoring somewhat higher than the total control group (the differences were not significant when boys and girls were considered separately). A study of gains was made in this case, with the result that the experimental group was shown to have made greater gains, but these were not significant.

TABLE G 1

MEAN SCORES ON THE OMNIBUS PERSONALITY INVENTORY FOR BOYS, GIRLS AND TOTALS IN EXPERIMENTAL AND CONTROL CLASSES

	PRE TESTING +			POST TESTING +		
	Exp.		Cont.	Exp.		Cont.
Boys						
Originality	45.93		44.06	47.60		45.87
Complexity	52.52		51.79	55.05		54.43
Estheticism	41.41		41.34	40.02		40.63
Theor. Orientation	50.16		48.36	50.78		48.59
Thinking Intro.	45.59		43.79	46.62		44.33
Girls						
Originality	46.49		45.21	49.25		47.03
Complexity	52.62		52.32	54.56		52.29
Estheticism	47.28		46.21	50.63	*	47.33
Theor. Orientation	45.70		43.14	46.97	*	42.98
Thinking Intro.	46.95		45.08	49.98	*	45.86
Totals						
Originality	46.22		44.73	48.47	*	46.55
Complexity	52.57		52.10	54.80		53.17
Estheticism	44.42		44.19	45.58		44.58
Theor. Orientation	47.87	*	45.31	48.78	*	45.29
Thinking Intro.	46.29		44.54	48.39	*	45.23

+ Pre-score differences were tested with a two-tailed t and post-score differences with a one-tailed t.

* Indicates significances at the 0.05 confidence level between adjacent means.

Allport-Vernon-Lindzey Study of Values (Table G 2):

At post-testing the total experimental group was significantly higher than the control group on the Theoretical scale, and significantly lower than the control group on the Social scale. The boys followed a similar pattern, with the experimental boys scoring significantly higher on the Theoretical scale and significantly lower on the Social scale than did the control boys. The only significant difference observed for the girls was that the experimental girls were higher than the control girls on the Aesthetic scale.

The only significant pre-test differences were on the Social scale for the boys and for the totals. These differences were very similar to the ones described above at post-testing; thus, the experiment did not appear to affect the scores on this scale and, in fact, was not intended to do so.

TABLE G 2

MEAN SCORES ON THE ALLPORT-VERNON-LINDZEY STUDY OF VALUES FOR BOYS, GIRLS, AND TOTALS IN EXPERIMENTAL AND CONTROL CLASSES

	PRE TESTING +			POST TESTING +		
	Exp.		Cont.	Exp.		Cont.
Boys						
Theoretical	45.86		45.38	48.38	*	45.21
Economic	43.73		43.15	44.07		43.15
Aesthetic	32.02		33.43	33.25		34.40
Social	33.79	*	37.64	32.25	*	36.00
Political	43.70		42.49	44.48		44.04
Religious	39.77		38.04	37.77		37.21
Girls						
Theoretical	39.15		38.08	38.31		36.46
Economic	38.07		38.61	35.72		37.65
Aesthetic	37.48		36.89	40.85	*	37.53
Social	42.30		42.36	42.86		43.51
Political	39.64		40.80	39.98		41.26
Religious	42.95		43.00	42.83		43.59
Totals						
Theoretical	42.36		41.12	42.97	*	40.03
Economic	40.78		40.50	39.59		39.90
Aesthetic	34.86		35.45	37.33		36.25
Social	38.22	*	40.40	37.95	*	40.44
Political	41.58		41.50	42.12		42.42
Religious	41.43		40.94	40.49		40.98

+ Pre-score differences were tested with a two-tailed _t_ and post-score differences with a one-tailed _t_.

* Indicates significances at the 0.05 confidence level between adjacent means.

Critical Thinking Test Form G (Table G 3): On the Critical Thinking Test, marked differences were found at the end of the experimental year. Even though at pre-testing there were no significant differences between the experimental and control groups (for boys, girls, or totals), at post-testing the experimental boys scored significantly higher than the control boys, the experimental girls scored significantly higher than the control girls, and the total experimental group scored significantly higher than the total control group.

TABLE G 3

MEAN SCORES ON THE TEST FOR CRITICAL THINKING FOR BOYS, GIRLS AND TOTALS IN EXPERIMENTAL AND CONTROL CLASSES

	PRE TESTING +		POST TESTING +		
	Exp.	Cont.	Exp.		Cont.
Boys	27.48	26.14	32.00	*	29.42
Girls	28.03	27.73	32.97	*	31.05
Totals	27.78	27.07	32.51	*	30.38

+ Pre-score differences were tested with a two-tailed t and post-score differences with a one-tailed t.

* Indicates significant differences at the 0.05 confidence level.

Rokeach Dogmatism and Rigidity (Table G 4): No significant differences between the experimental and control groups were found on Dogmatism or Rigidity, at pre- or post-testing, in comparing boys, girls, or totals.

TABLE G 4

MEAN SCORES ON DOGMATISM AND RIGIDITY FOR BOYS,
GIRLS AND TOTALS IN EXPERIMENTAL
AND CONTROL CLASSES

	Pre-Testing +		Post-Testing +	
	Exp.	Cont.	Exp.	Cont.
Dogmatism				
Boys	176.89	176.98	170.22	172.09
Girls	164.00	165.77	166.02	163.86
Totals	170.74	170.51	168.02	167.28
Rigidity				
Boys	102.40	105.26	95.04	96.79
Girls	98.00	96.41	91.64	92.67
Totals	100.15	100.09	93.25	94.38

+ Pre-score differences were tested with a two-tailed t and post-score differences with a one-tailed t.

Discussion: From the results of the OPI and the AVL Study of Values, it is seen that, as hypothesized, the experimental treatment had a significant effect on the value systems of the students involved, especially in the areas of theoretical orientation, aestheticism, originality, and thinking introversion.

It should also be noted that the six AVL scales are interrelated so that a high score on one necessitates a low score on some other scale (or scales), whereas the OPI measures the depths of different values as compared with other students. Thus, from our own test results, not only did the experimental students develop stronger intellectual attitudes, but they also valued these attitudes more highly with respect to their other attitudes.

The Critical Thinking Test also yielded striking results, with both the experimental boys and girls increasing their ability to think critically and make appropriate choices more than the control students.

The Rokeach scales did not distinguish the experimental group from the control, although in previous research* they had significantly differentiated the creative intellectual from the other profiles. After further study, however, it was suggested that many of the Rokeach items contradicted some of the basic concerns of this research, principally in the areas of humanitarianism, dedication, and a "sense of destiny"--the idea that an individual can make a difference in society.*

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*Elizabeth M. Drews, "A Study of Non-Intellectual Factors in Superior High School Students," Cooperative Research Study No. E-2.

D. Informal Measures

Student Interest Survey Scales (Table G 5): At the beginning of the experimental year, the only significant difference was on the social leader scale for the total group and for the girls considered separately: the experimental group was lower than the control. This difference was still evident at the end of the study; it apparently had not changed. However, new differences were observed at post-testing. For the boys, the girls, and the total sample, the experimental groups were significantly higher than the controls on the creative intellectual scale.

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*Some examples of these items are:
a) If given the choice I would do something that would be of great benefit to the world.
b) It is when a person devotes himself to an ideal or cause that his life becomes meaningful.
c) While I don't like to admit this even to myself, I sometimes have the ambition to become a great man, like Einstein, or Beethoven, or Shakespeare.
d) The main thing in life is for a person to want to do something important.

Agreement with any of these statements indicates Dogmatism or Rigidity on the Rokeach Scales, whereas in this research such a desire would be encouraged.

TABLE G 5

MEAN SCORES ON THE STUDENT INTEREST SURVEY SCALES FOR BOYS, GIRLS, AND TOTALS IN EXPERIMENTAL AND CONTROL CLASSES

	PRE TESTING +			POST TESTING +		
	Exp.		Cont.	Exp.		Cont.
Boys						
Creative Intellectual Scale	49.48		48.32	54.41	*	49.40
Studious Scale	50.39		50.23	47.70		48.38
Social Leader Scale	49.82		52.00	50.66		52.00
Girls						
Creative Intellectual Scale	52.74		50.44	58.56	*	54.56
Studious Scale	53.08		52.05	46.84		47.58
Social Leader Scale	47.75	*	51.05	47.84	*	51.70
Totals						
Creative Intellectual Scale	51.18		49.56	56.63	*	52.42
Studious Scale	51.79		51.29	47.24		47.91
Social Leader Scale	48.74	*	51.44	49.16	*	51.82

+ Pre and Post-score of differences between experimental and control groups were tested by the Wilcoxin-Mann-Whitney U test.

* Indicates significant differences at the .05 confidence level.

Reasons for Occupational Choice (Table G 6): At post-testing, there were significantly more students in the total experimental group than in the control group who picked creative intellectual reasons as compared with social leader reasons, and this difference was also significant for the girls considered separately. Although the boys followed a similar trend, the difference was not significant. No significant differences were observed at pre-testing.

TABLE G 6

DISTRIBUTION OF THE THREE MOST IMPORTANT CHOICES FOR EXPERIMENTAL AND CONTROL CLASSES ON "REASONS FOR OCCUPATIONAL CHOICE" ACCORDING TO CREATIVE INTELLECTUAL, SOCIAL LEADER, AND STUDIOUS REASONS

	PRE TESTING		POST TESTING	
	Exp.	Cont.	Exp.	Cont.
Boys				
Creative Intellectual Reasons	59	62	77	56
Social Leader Reasons	52	30	37	36
Studious Reasons	57	52	54	52
Possible Choices (3 x N)	168	144	168	144
Girls				
Creative Intellectual Reasons	82	78	107 *	89
Social Leader Reasons	36	46	22	43
Studious Reasons	80	74	69	66
Possible Choices (3 x N)	198	198	198	198
Totals				
Creative Intellectual Reasons	141	140	184 *	145
Social Leader Reasons	88	76	59	79
Studious Reasons	137	126	123	118
Possible Choices (3 x N)	366	342	366	342

* Indicates a significant difference (p<.05 as tested by chi square) between experimental and control classes on creative intellectual reasons chosen and social leader reasons chosen.

Student Profile Check (Table G 7): At pre-testing, almost two-thirds of the sample checked studious, about one-fourth picked creative-intellectual, and the rest chose social leader. At post-testing, only about half of the sample picked studious, which resulted in more choice for both creative-intellectual and social leader. In comparing the experimental and control groups on the changes in profile check, the experimental boys shifted to the creative-intellectual profile significantly more often than to the studious and social leader profiles (grouped together) as compared with the control boys. This was especially significant in comparing the changes to creative intellectual with the changes to social leader ($p<.005$). However, no significant differences were found between the experimental and control girls* or the total groups.

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*Almost all of the control girls who changed to creative intellectual attended one junior high school in which the control group tried to keep up with the experimental group and biased the results.

TABLE G 7

TOTALS IN STUDENT PROFILE CATEGORIES AT PRE- AND POST-TESTING

	Studious		Creative Intellectual		Social Leader	
	Pre	Post	Pre	Post	Pre	Post
Experimental						
Boys	39	31	11	19	6	6
Girls	40	35	19	18	5	11
Totals	79	66	30	37	11	17
Control						
Boys	28	26	15	11	4	10
Girls	44	33	12	20	10	13
Totals	72	59	27	31	14	23

Results of Chi square and exact probability analysis of profile shifts from Pre to Post:

1. Experimental boys shifted to intellectual significantly more often than to studious or social leader (grouped together) as compared with control boys. Significant level $<.05$.

2. Experimental boys shifted to intellectual significantly more often than to social leader as compared with control boys. Significant level $<.005$.

3. Experimental boys shifted from studious to intellectual significantly more often than from studious to social leader as compared with control boys. Significant level $<.009$.

Ability Self-Concept (Tables G 8 and G 9): In comparing the experimental and control groups, no significant differences were found between pre- and post-testing for the boys, the girls, or the total groups. In addition, a selected group of high creative* students were compared with a selected group of low creative students on the Ability Self-Concept. Again, no significant differences were found.

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*Selection based on OPI scales; see footnote, p. F-15.

TABLE G 8

COMPARISON OF EXPERIMENTAL AND CONTROL STUDENTS ON PRE AND POST ABILITY SELF-CONCEPT RATINGS

	Experimental			Control		
	A	B	C	A	B	C
Pre-testing						
Boys	0	22	36	0	23	24
Girls	0	24	38	0	30	36
Totals	0	46	74	0	53	60
Post-testing						
Boys	0	19	39	2	16	29
Girls	0	27	35	0	24	42
Totals	0	46	74	2	40	71

TABLE G 9

COMPARISON OF HIGH AND LOW CREATIVE, AS MEASURED BY THE OMNIBUS PERSONALITY INVENTORY, EXPERIMENTAL AND CONTROL STUDENTS ON POST ABILITY SELF-CONCEPT RATINGS

	High Creative			Low Creative		
	A	B	C	A	B	C
Boys	0	2	14	1	5	12
Girls	0	9	14	0	7	14
Totals	0	11	28	1	12	26

Scale of Choices:

A = Below Average
B = Average
C = Above Average

No significant differences using Chi squares were found for either boys, girls, or totals.

Discussion: The results of the informal measures give additional support to the hypotheses. The experimental students' attitudes toward school, themselves, and their futures, as measured by the Student Interest Survey, as well as their reasons for choosing an occupation, showed a significant increase in the valuing of intellectual concerns. Though the Student Profile (as a description of a "whole" person) would be more difficult to change than a single value, the experimental boys changed to the intellectual profile significantly more often than to the others. Although the experimental group did not increase more than the control group on the Ability Self-Concept (as was originally hypothesized), this might be due to the many high-level achievements to which they were exposed--their own achievements would be diminished in relation to what the models had accomplished.

II. The Feminine Dimension

Acceptance of Women Scale (Tables G 10 and G 11): The median for the experimental girls was significantly higher ($p < .0003$, determined by the Mann Whitney U test) than that of the control girls. The difference in medians for the boys was not significant.

TABLE G 10

MEDIANS ON ACCEPTANCE OF WOMEN SCALE

	Experimental	Control
Boys	22	21.5
Girls	27 *	25

* $p < .0003$ as determined by the Mann Whitney U test.

Also, significantly more experimental girls were high scorers than low scorers* in comparison with the control girls. No significant differences were found among the boys.

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*A high score was at least one standard deviation above the mean and, similarly, a low score was one standard deviation below the mean.

TABLE G 11

COMPARISON OF HIGH AND LOW SCORERS ON ACCEPTANCE OF WOMEN SCALE

	Experimental		Control
Girls			
High +	18	*	7
Low +	10		21
Boys			
High +	13		14
Low +	6		8

+ High scores were defined as those more than one standard deviation above the mean with a parallel definition for low scores.

* $p < .005$ as determined by chi squares.

Self-Actualization Levels of Women (Tables G 12 and G 13): In picking the description most like themselves, significantly more girls in the experimental group preferred Level 3 to either Level 1 or Level 2 as compared with the control girls, and this was true for both the Real and the Ideal choices. The experimental boys showed similar results in choosing the kind of wife they expected to have (the Real choice); they picked

Level 3 significantly more often than the control boys. However, this difference was not significant on the Ideal choice.

For both the experimental and control groups, Real and Ideal choices, many more girls picked Level 3 than did the boys. Also, the experimental girls who chose Level 3 for both their Real and Ideal choices scored significantly higher on the Acceptance of Women Scale than did the comparable sample of control girls.

TABLE G 12

DISTRIBUTION OF CHOICES ON THE SELF-ACTUALIZATION LEVELS OF WOMEN

	Real			Ideal		
	1.*	2.	3.	1.	2.	3.
Boys						
Experimental	7	34	12	7	34	12
Control	16	25	4	15	23	8
		(p< .02)+				
Girls						
Experimental	2	28	32	2	21	39
Control	7	33	21	13	31	18
		(p<.05)+			(p<.0005)+	

Level:
- * 1) No college; 2) some college; 3) college or beyond.
- + Differences were tested by chi square.

TABLE G 13

MEANS ON ACCEPTANCE OF WOMEN SCALE FOR THOSE GIRLS CHOOSING LEVEL 3 BOTH REALLY AND IDEALLY

	Experimental		Control
Number of girls choosing Level 3 both really and ideally	29		11
Acceptance of Women score	28.24	*	26.00

* $P_t < .05$

Humanitarian-Altruism Scale (Table G 14): At the end of the study, the experimental girls scored significantly higher on the Humanitarian-Altruism Scale than did the control girls; however, the difference between the boys was not significant.

TABLE G 14

MEANS FOR THE HUMANITARIAN-ALTRUISM SCALE

	Experimental		Control
Boys	204.1		205.4
Girls	239.4	*	232.3

* $p < .045$, as determined by the Mann Whitney U test.

In both the experimental and control groups, the girls scored higher than the boys.

Discussion: The results of the Acceptance of Women Scale and the Self-Actualization Levels of Women both indicate that the experimental girls increased their acceptance of women who develop themselves and perhaps enter high level careers. The experimental girls also increased their own expectancies more than did the control girls. The boys followed a similar trend, although to a lesser degree; the experimental group expected more mature, creative, and highly educated wives than the control group. The experiment also increased the social concern and humanitarianism of the girls, though seemingly not for the boys. As was predicted, the girls in general were more concerned with social problems than were the boys.